

Sulfur Hexafluoride From Electric Power Sources



Proposed Rule: Mandatory Reporting of Greenhouse Gases

Under the proposed Mandatory Reporting of Greenhouse Gases (GHGs) rule, owners or operators of electric power transmission and distribution systems that include electrical equipment with a total nameplate capacity that exceeds 17,820 lbs (7,838 kg) of sulfur hexafluoride (SF₆) and/or perfluorocarbons (PFCs) would report emissions of SF₆ and/or PFCs from electric power transmission and distribution systems. Owners or operators would collect emission data, calculate GHG emissions, and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting.

How Is This Source Category Defined?

Under the proposal, electric power systems include electric power transmission and distribution systems that operate gas-insulated substations, circuit breakers, switchgear, gas-insulated lines, or power transformers.

What GHGs Would Be Reported?

The proposal calls for each electric power system to report total SF₆ and PFC emissions (including emissions from equipment leaks, installation, servicing, decommissioning, and disposal, and from storage cylinders) from the following types of equipment:

- Gas-insulated substations
- Circuit breakers
- Switchgear
- Electrical transformers
- Gas-insulated lines

How Would GHG Emissions Be Calculated?

Under the proposal, owners or operators of electric power systems would calculate SF₆ and PFC emissions for each electric power system using a mass-balance approach that takes into account the following:

- Decrease in SF₆ Inventory: The SF₆ stored in containers at the beginning of the year minus the SF₆ stored in containers at the end of the year.
- Acquisitions of SF₆: The amount of SF₆ purchased from chemical producers, bulk distributors, equipment manufacturers, or distributors minus the amount of SF₆ returned to site after offsite recycling.
- Disbursements of SF₆: The sum of the amount of SF₆ in bulk and contained in equipment that is sold to other entities, returned to suppliers, and sent off site for recycling or destruction. Facilities returning cylinders to storage or to the supplier would either weigh the cylinders themselves or have the supplier weigh the cylinders, obtaining a detailed monthly account (within 1 percent) from the supplier. In either case, the scale would have to be certified to be accurate within 1 percent of the true weight and recalibrated at least annually.

This document was developed for the *Proposed* Mandatory GHG Reporting Rule. For the final document, please visit the *final* [Mandatory Reporting of Greenhouse Gases Rule](#).

- **Net Increase in Total Nameplate Capacity of Equipment:** The nameplate capacity of new equipment minus the nameplate capacity of retiring equipment. Nameplate capacity refers to the full and proper charge of gas specified by the equipment manufacturer rather than the actual charge, which may reflect leakage.

$$\text{Emissions} = \text{Decrease in SF}_6 \text{ Inventory} + \text{Acquisitions of SF}_6 - \text{Disbursements of SF}_6 \\ - \text{Net Increase in the Nameplate Capacity of Equipment}$$

- PFC emissions (e.g., from transformers that formerly used CFC-113) would be calculated in the same way, substituting the PFC for SF₆ in the equation above.

What Information Would Be Reported?

In addition to the information required by the General Provisions at 40 CFR 98.3(c), the proposal calls for each electric power system to report:

- Nameplate capacity of equipment containing SF₆ and PFCs at the beginning of the year, of new equipment purchased during the year and of equipment retired during the year.
- Transmission miles (length of lines carrying voltages at or above 34.5 kilovolts [kV]).
- SF₆ and PFC sales and purchases.
- SF₆ and PFCs sent off site for destruction.
- SF₆ and PFCs sent off site for recycling.
- SF₆ and PFCs returned from off site after recycling.
- SF₆ and PFCs stored in containers at the beginning and end of the year.
- SF₆ and PFCs with or inside new equipment purchased in the year.
- SF₆ and PFCs with or inside equipment sold to other entities.
- SF₆ and PFCs returned to suppliers.

For More Information

This series of information sheets is intended to assist reporting facilities/owners in understanding key provisions of the proposed rule. However, these information sheets are not intended to be a substitution for the rule. Visit EPA's Web site (www.epa.gov/climatechange/emissions/ghgrulemaking.html) for more information, including the proposed preamble and rule and additional information sheets on specific industries, or go to www.regulations.gov/ to access the rulemaking docket (EPA-HQ OAR-2008-0508). For questions that cannot be answered through the Web site or docket, call 1-877-GHG-1188.